

Application No. 10/009,640

REMARKS

Claims 2, 3, 5, 9, 10, 12, and 15-28 remain pending in the application.

Specification Amendments

Pages 40 and 41 are amended to correct the reference to the trademark OLESTER.

Claim Amendments

By this amendment, claims 1, 2 and 4 are combined in claim 2. Claims 1 and 3 are combined with claim 3. Claims 1 and 4 are cancelled. Claims 8, 9 and 11 are combined in claim 9. Claims 8 and 10 are combined in claim 10. Claims 8 and 11 are thus cancelled. The term "water-insoluble" is added to claims 2, 3, 9 and 10. Support for this amendment resides at page 14, lines 18-19 of the specification. The dependencies of claims 15, 16, 20, 25 and 27 are changed in view of the above amendments. No new matter is added by this amendment.

Filing of Certified Copy of Priority Document

Applicants note that the instant application is a national stage application based on PCT/JP01/03658, filed April 26, 2001. A copy of the priority application should accordingly have been provided to the Patent Office by WIPO. The Examiner is

Application No. 10/009,640

encouraged to make the necessary inquiries of PCT personnel in the Patent Office to confirm whether a copy of the priority document has been provided.

Allowable Subject Matter

Applicants acknowledge with thanks the indication of allowable subject matter of claims 5, 12, 16-17, 19, 21, 22, 24, 26, and 28. However, in view of the above amendments and the following remarks, it is believed that all pending claims are allowable.

Objection to Specification

The Examiner objects to the specification as containing an improper reference to the trademark OLESTER. In response, pages 40 and 41 of the specification are amended to correct this deficiency. The objection is now without basis and should be withdrawn.

Applicants' Claimed Invention

Applicants' invention is directed to a lithographic printing original plate having a photosensitive layer on a substrate directly or on another layer provided thereon. The photosensitive layer is made of a crosslinked polymer having ink repellency, wherein the photosensitive layer is a water-

Application No. 10/009,640

insoluble photosensitive hydrophilic resin layer obtained by crosslinking a photosensitive composition comprising a hydrophilic polymer, a crosslinking agent, a light absorbing compound and a hydrophobic polymer, and having properties wherein the photosensitive layer is changed from ink-repellant to ink-receptive by irradiation with light. Preferably, the photosensitive hydrophilic resin layer has a phase-separation structure comprised of a hydrophilic polymer phase and a hydrophobic polymer phase. Applicants' invention is neither disclosed nor suggested by the cited prior art.

Objection to Product-by-Process Limitations

Applicants' initially note that the Examiner indicates at page 2 of the Official Action that no patentable weight is given to the limitation directed to the property change of the hydrophilic polymer changing from ink-repellant to ink-receptive for the reason that such a limitation is a "product-by-process" limitation. In response to this view of the Examiner, the claims are amended in a manner which is believed sufficient to rebut this view of the Examiner such that this limitation should be given patentable weight.

Application No. 10/009,640

Rejection under 35 USC 102(e) over Verschueren et al

Claims 1-4, 8-11 and 15 stand rejected under 35 USC 102(e) as being anticipated by Verschueren et al. This rejection respectfully is traversed to the extent deemed to apply to the claims as amended.

Verschueren et al is directed to a heat-sensitive material for making lithographic printing plates having on a lithographic support an image-forming layer including a hydrophilic binder, a crosslinking agent for the hydrophilic binder, metal oxide particles with a mean diameter of at least 100 nm, and dispersed hydrophobic thermoplastic polymer particles.

By contrast, the photosensitive layer of the lithographic printing original plate of applicants' invention is cross-linked and water-insoluble before being irradiated with light as provided for in claims 2 and 3. In view of such characteristics, the lithographic printing original plate can become completely without need of development by dissolving the unexposed areas of the photosensitive layer with a fountain solution during printing.

In the present invention, after the coating of a photosensitive composition, the composition is dried at an elevated temperature of 120 °C for 3 hours to complete the cross-linking of the photosensitive layer as described at Examples 1-3 of the specification.

Application No. 10/009,640

By contrast, Verschueren teaches the use of a drying temperature of 50 °C in the examples. The photosensitive layer of the reference accordingly cannot be completely cross-linked at such temperatures.

The existence of some similarities between the components present in the respective compositions notwithstanding, the resulting products are completely distinct from each other due to the existence of a cross-linked polymer in applicants' photosensitive layer prior to irradiation by light.

With respect to the phase separation limitation, applicants' phase separation structure comprised of a hydrophilic polymer phase and a hydrophobic polymer phase is also not taught by the reference.

The claims are amended to define the photosensitive layer as being water-insoluble. This is believed to be in contrast to the photosensitive layer of the reference which appears to be water-soluble.

In this regard, EP 770494A, which is the corresponding application of Verschueren, describes at Example 1 a photosensitive composition comprised of titanium dioxide, polyvinyl alcohol (hydrophilic polymer), and tetramethylorthosilicate (cross-linking agent) which was dried at 30 °C, and subsequently hardened (cross-linked) at a temperature of 57 °C for one week.

Application No. 10/009,640

Under such conditions, development is still needed by dissolving the unexposed areas of the photosensitive layer with a fountain solution as described in claim 1 of EP '494. The composition of Example 3 of EP '494 is the same as that of Verschueren except for the non-incorporation of hydrophobic thermoplastic polymer particles, such that the cross-linking of Verschueren appears to be less severe than that of EP '494. In view of the above, applicants conclude that the photosensitive layer of Verschueren is water-soluble, as opposed to water-insoluble as required by applicants.

The rejection is thus without basis and should be withdrawn.

Application No. 10/009,640

Rejection under 35 USC 102(e) over Leon et al

Claims 1-2, 4, 8-9, 11, 15, 18, 20 and 23 stand rejected under 35 USC 102(e) as being anticipated by Leon et al. This rejection respectfully is traversed to the extent deemed to apply to the claims as amended.

Leon discloses an imaging member comprising a support having a hydrophilic imaging layer comprised of a hydrophilic heat-sensitive cross-linked vinyl polymer which is thermally switchable. The polymer comprises repeating units of organoonium groups wherein post-imaging wet processing of the imaging member is not required (see claim 1).

Leon is similar to the claimed invention only with respect to the aspect that exposed areas are rendered more oleophilic than the unexposed areas by heat provided by the imagewise exposing (see column 3, lines 24-26). However, the reference teaches that the hydrophilic resin itself in the photosensitive layer is rendered oleophilic with irradiation of light. Moreover, Leon does not make reference to the presence of a hydrophobic polymer.

The rejection is thus without basis and should be withdrawn.

Application No. 10/009,640

Rejection under 35 USC 102(e) over Van Damme et al

Claims 1-2, 4, 8-9, 11, 15, 18, 20, and 23 stand rejected under 35 USC 102(e) as being anticipated by Van Damme et al. This rejection respectfully is traversed to the extent deemed to apply to the claims as amended.

Van Damme et al is directed to a heat-sensitive imaging element for providing a lithographic printing plate. The element is comprised of a support and as a top layer a heat switchable image forming layer comprising a hardened hydrophilic binder and a heat switchable polymer wherein the top layer or a layer adjacent to the top layer comprises a compound capable of converting light into heat.

Van Damme et al is silent with respect to the existence of a phase separation structure consisting of a hydrophilic polymer phase and a hydrophobic polymer phase of the present invention. The reference discloses only that a portion of the heat switchable polymer, not an island phase of the island-sea structure of the present invention, is converted to being oleophilic with heat.

Further, the reference teaches the use of a polymer containing aryldiazosulphonate units as the heat switchable polymer.

The heat switchable polymer itself is converted to being oleophilic with heat, so that there is no need for the presence

Application No. 10/009,640

of the hydrophobic polymer phase of the present invention - further, the hydrophobic polymer of Van Damme et al is not rendered oleophilic.

The rejection is thus without basis and should be withdrawn.

Rejection under 35 USC 103(a) over Verschuieren et al

Claims 18, 20, 23, 25 and 27 stand rejected under 35 USC 103(a) as being unpatentable over Verschuieren et al. This rejection respectfully is traversed to the extent deemed to apply to the claims as amended.

The deficiencies of Verschuieren et al are discussed at length above. Given such deficiencies, the recited claim limitations cannot be deemed to be obvious in view of the teachings of the reference.

The rejection is thus without basis and should be withdrawn.

A check in the amount of \$420.00 is attached for the requested two-month extension of time.

Application No. 10/009,640

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Very truly yours,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 


Raymond C. Stewart

Reg. No. 21,066

P.O. Box 747

Falls Church, VA 22040-0747

(703) 205-8000


RCS/JWH/sh
1155-0264P